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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,165	04/19/2001	Keiki Yamada	0054-0230P	8432

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EXAMINER	
HUNTSINGER, PETER K	
ART UNIT	**PAPER NUMBER**
2625	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/837,165	YAMADA ET AL.	
	Examiner	Art Unit	
	Peter K. Huntsinger	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 3/31/06 have been fully considered but they are not persuasive.

The applicant argues on pages 2 and 3 of the response in essence that:

The combination of Kawabe and Furuya fail to teach an exposure level correction section.

a. Feruya et al. disclose an exposure level correction section that corrects the exposure level data output from said exposure level conversion section using a correction factor for each element of said print head, the correction factor being based upon predetermined data stored in a correction table that correlates the exposure level for each element of said print head with an optimal exposure level (col. 13, lines 19-28).

The applicant argues on page 3 of the response in essence that:

Furuya's teachings are not analogous to the claimed features or to Kawabes' teachings.

b. Furuya discloses a printing apparatus. This can be considered in the same field as Kawabe et al. because they are both in the field of printing systems.

The applicant argues on pages 3 and 4 of the response in essence that:

The control of the active time factor in Furuya is not used to control the exposure amount as it is for density.

c. Furuya et al. disclose providing density data that determine an active-time factor by a lookup table (col. 13, lines 15-28). The active-time factor, as shown in table of column 14, directly correlates with the exposure level. Thus, in determining the optimal density levels, the optimal exposure levels are determined. This allows the invention of Furuya to achieve the density levels as the density level is the result of the inputted exposure level.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 5, and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabe et al. U.S. Patent 6,034,710 and Feruya et al. U.S. Patent 5,418,097.

Referring to claim 1, Kawabe et al. discloses an optical printing apparatus in which an image data indicative of a density of each of a plurality of pixels forming an image with a first gradation value is input (col. 9, lines 53-65), so that a plurality of exposure elements of a print head (recording elements, col. 2, lines 36-39) are each

driven to perform an exposure with a required quantity of exposure light, thereby forming a pixel corresponding to each of said exposure elements on a photosensitive printing medium which generates a color of a density corresponding to said required quantity of exposure light (col. 9, lines 4-16), said apparatus comprising: an exposure level conversion section (printing head control section 40) for converting said image data into corresponding exposure level data (col. 9, lines 53-65) indicative of a density of each pixel with a second gradation value greater than said first gradation value indicated by said image data (col. 7, lines 9-20), said conversion of said image data being based upon predetermined data correlating the image data to exposure level data stored in a conversion table (Table 1, col. 13, lines 13-40), and for outputting the exposure level data thus converted (col. 11, lines 42-54); and a head driving section (printing head 30) being connected to receive said corrected exposure level data from said exposure level correction section and driving, based on said corrected exposure level data, each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said corrected exposure level data is exposed to said photosensitive printing medium, thereby forming a pixel of a density corresponding to said corrected exposure level data on said photosensitive printing medium (col. 11-12, lines 55-67, 1-29). Kawabe et al. do not disclose expressly an exposure level correction section based upon predetermined data. Feruya et al. disclose an exposure level correction section that corrects the exposure level data output from said exposure level conversion section using a correction factor for each element of said print head, the correction factor being based

upon predetermined data stored in a correction table that correlates the exposure level for each element of said print head with an optimal exposure level (col. 13, lines 19-28). Kawabe et al. and Feruya et al. are combinable because they are from the same field of color correction in printing systems. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to correction exposure data using a predetermined correction factor. The motivation for doing so would have been to produce image quality without deterioration. Therefore, it would have been obvious to combine Feruya et al. with Kawabe et al. to obtain the invention as specified in claim 1.

Referring to claim 2, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said photosensitive printing medium has a nonlinear chromophore density characteristic in which the density of a color generated in accordance with a quantity of exposure light is nonlinear with respect to the quantity of exposure light (See Fig. 8-10 showing density vs. exposure), and said exposure level conversion section converts said image data into said exposure level data in such a manner that the density of a pixel formed on said photosensitive printing medium corresponding to said exposure level data is linear with respect to the image data corresponding to said exposure level data (col. 14, lines 50-67).

Referring to claim 3, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein upon exposure of each element of said print head, the quantity of light per unit time of each element is constant, and said head driving section drives each element of said print head in such a manner that the exposure time of each

element is proportional to the magnitude of said exposure level data (col. 2, lines 24-35).

Referring to claim 5, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said image data indicates the density of each of three primary colors for a plurality of pixels forming a color image with said first gradation value for each pixel (col. 9, lines 9-16), and said exposure level conversion section converts said image data input thereto into corresponding exposure level data for each color which is indicative of the density of each color of each pixel represented by said image data with a second gradation value greater than said first gradation value for each color (col. 9, lines 43-46), and said head driving section receives said exposure level data for each color and drives each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said exposure level data is exposed to said photosensitive printing medium, thereby forming a pixel of a density for each color corresponding to said exposure level data for each color on said photosensitive printing medium (col. 9, lines 46-49).

Referring to claim 8, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, wherein said exposure level correction section comprises: a multiplier (multiplier 41 of Fig. 3) for multiplying said correction factors and exposure level data (col.11, lines 42-45); wherein said exposure level correction section determines corrected exposure level data from a correction factor read out from said correction table and an input exposure level data, and outputs the corrected exposure level data thus determined (col. 11, lines 43-54)

Referring to claim 9, Kawabe et al. discloses the optical printing apparatus as claimed in claim 1, further comprising: an accumulated exposure time information storing section (correction memory 66) for storing accumulated exposure time information corresponding to an accumulated exposure time of said print head (col. 14, lines 50-67); and an exposure level correcting section for correcting exposure level data output from said exposure level conversion section in accordance with accumulated exposure time information output from said accumulated exposure time information storing section, and for outputting the thus corrected exposure level data (col. 15, lines 1-3); wherein said head driving section receives said corrected exposure level and drives each element of said print head to expose said photosensitive printing medium in such a manner that a quantity of light corresponding to said input corrected exposure level is exposed to said photosensitive printing medium, thereby forming a pixel of a density corresponding to said corrected exposure level data on said photosensitive printing medium (col. 15, lines 1-3).

Referring to claim 10, Kawabe et al. discloses the optical apparatus as claimed in claim 1, wherein said image data is converted into said exposure level data in accordance with characteristics of said print head and said photosensitive printing medium (col. 30, lines 31-39).

Referring to claim 11, Kawabe et al. discloses the optical apparatus as claimed in claim 1, wherein said correction factor includes converting said unevenness in density resulting from said print head (col. 4, lines 13-18).

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter K. Huntsinger whose telephone number is (571)272-7435. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Williams can be reached on (571)272-7471. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PKH

Twyler M. Lamb
Supervisory Patent Examiner